

SYSTEM AND METHOD FOR CORRECTING 3D EFFECTS  
IN AN ALTERNATING PHASE-SHIFTING MASK

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ABSTRACT

An accurate, cost-effective system and method for correcting 3D effects on an alternating phase-shifting mask (PSM) is provided. To facilitate this correction, a library can be built to include a first group of 180 degree phase-shifting regions, wherein these regions have a common first size. Based on this first size, 3D simulation is performed. A transmission and a phase are altered in a 2D simulation based on this first size until a shape dependent transmission and a shape dependent phase allow the 2D simulation to substantially match the 3D simulation. Finally, a modified first size is chosen using the shape dependent transmission and the shape dependent phase such that a 2D simulation based on the modified first size substantially matches the 3D simulation based on the first size. The library associates the first size with the modified first size, the shape dependent transmission, and the shape dependent phase.